

NOTE ON THE REARING OF
DERMESTES MACULATUS
DeGEER (COLEOPTERA: DERMESTIDAE)

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Rearing procedures for insects that infest military subsistence and materials are variable and each laboratory uses methods suitable for its own needs. Detailed rearing conditions are essential to meet the following requirements:

- 1) provide standardized methods for the most efficient use of equipment, space, and time.
- 2) control populations to avoid variable physiological conditions of test insects.
- 3) eliminate time-consuming operations such as separating adults to start new cultures and the sorting of larvae.
- 4) produce sufficient insects of known age and sex for scheduled experiments.
- 5) provide precise, continuous maintenance of experimental stock.

Our rearing procedures include modifications and additions to those of Shepard (1943), Gray (1943), Laudani (1940), Sweetman (1956), Pence (1958), Russell (1961), Boles and Marzke (1966), Strong *et al.* (1967 and 1968).

¹ Accepted for publication: August 9, 1973.

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Of the twenty (20) species of Coleoptera in our insectary, the hide beetle, *Dermestes maculatus* DeGeer, is the most difficult to rear because of cannibalism. Von Dobkiewicz (1928) recognized this problem and observed that adult stages ate younger larvae and that older larvae ate fresh pupae. Scoggin and Tauber (1949) removed pupae daily from cultures to avoid predation by larvae.

Separation and subsequent isolation of *D. maculatus* pupae are essential to satisfy requirement number four. Our method utilizes "Lab Chow" (available from Ralston Purina Company, St. Louis, Missouri) as the basis food for young larvae and a plastic box to isolate late instars, pupae, and adults. The plastic box (available from Tri-State Plastics, Henderson, Kentucky) is made of clear polystyrene with overall dimensions 6-5/16" wide x 9-1/2" long x 1-1/2" deep; the interior is divided into one rectangular compartment 2-9/16" w x 9-1/2" l x 1-1/2" d, and twelve individual

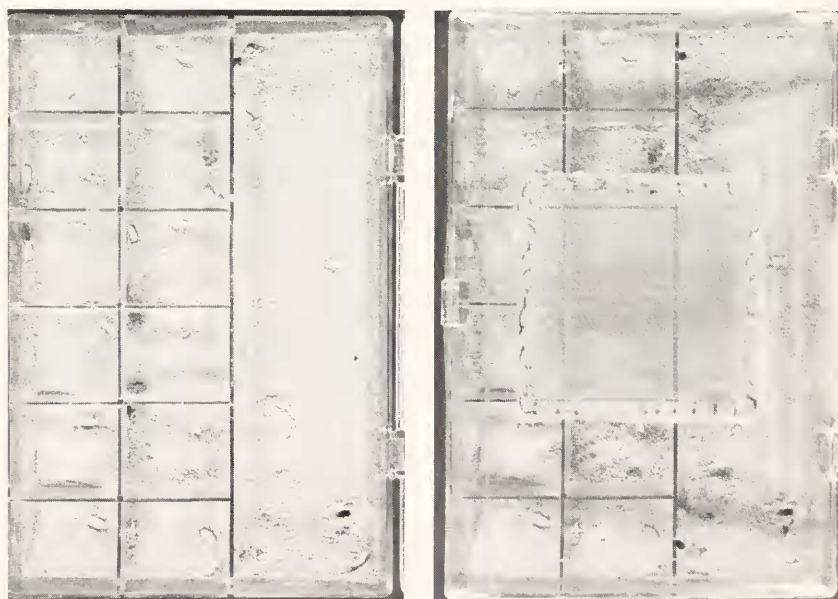


Fig. 1 - Closed and open views of plastic box for rearing *Dermestes maculatus* DeGeer.

compartments, each measuring $1\text{-}3/4''$ w x $1\text{-}9/16''$ l x $1\text{-}1/2''$ d (fig. 1). Late instar larvae are placed on "Lab Chow" in the long compartment and as pre-pupae occur, they are placed in the smaller compartments. The plastic box has a hinged, snap-fitting lid that was modified with a screen window to allow for gas exchange. These plastic boxes are easily handled, require small storage space, prevent cannibalism of pupae, and ultimately provide sufficient specimens for experimental purposes.

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